



TITLE OF THE INVENTION

MODIFICATIONS IN THE MULTI-BAND EXCITATION (MBE) MODEL FOR GENERATING HIGH QUALITY SPEECH AT LOW BIT RATES

CROSS REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 60/161,681, filed October 26, 1999.

FIELD OF THE INVENTION

The invention relates to processing a speech signal. In particular, the invention relates to speech compression and speech coding.

BACKGROUND OF THE INVENTION

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Compressing speech to low bit rates while maintaining high quality is an important problem, the solution to which has many applications, such as, for example, memory constrained systems. One compression scheme (coders) used to solve this problem is multi-band excitation (MBE), a scheme derived from sinusoidal coding.

The MBE scheme involves use of a parametric model, which segments speech into frames. Then, for each segment of speech, excitation and system parameters are estimated. The excitation parameters include pitch frequency values, voiced/unvoiced decisions and the amount of voicing in case of voiced frames. The system parameters include spectral magnitude and spectral amplitude values, which are encoded based on whether the excitation is sinusoidal or harmonic.

Though coders based on this model have been successful in synthesizing intelligible speech at low bit rates, they have not been successful in synthesizing high quality speech,